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1 Routine/Function Prologues

1.1 Fortran: Module Interface obsradforcing_module.F90 (Source File: obsradforcing_module.F90)

This module contains interfaces and subroutines that controls the incorporation of observed radiation forcing

REVISION HISTORY:

14Nov02 Sujay Kumar Initial Specification

INTERFACE:

```
module obsradforcing_module
  implicit none
```

ARGUMENTS:

```
real, pointer :: obswdata1(:)
real, pointer :: obswdata2(:)
real, pointer :: oblwdata1(:)
real, pointer :: oblwdata2(:)
integer :: sstat1, sstat2, lstat1, lstat2
```

1.1.1 LIS_obsradforcing_init (Source File: obsradforcing_module.F90)

INTERFACE:

```
interface LIS_obsradforcing_init
  module procedure rad_forcing_init
end interface
```

1.1.2 LIS_get_obsrad_forcing (Source File: obsradforcing_module.F90)

INTERFACE:

```
interface LIS_get_obsrad_forcing
  module procedure get_obsrad_forcing
end interface
```

1.1.3 rad_forcing_init (Source File: obsradforcing_module.F90)

Allocates memory for variables required for radiation forcing interpolation

INTERFACE:

```
subroutine rad_forcing_init()
```

USES:

```
use lisdrv_module, only:lis
use grid_spmMod
use radforcing_pluginMod, only :radforcing_plugin
```

CONTENTS:

```
if(lis%f%radsrc.gt.0) then
  call radforcing_plugin
#endif ( defined OPENDAP )
  call defnatresrad(lis%f%radsrc)
  allocate(obsdata1(gdi(iam)))
  allocate(obsdata2(gdi(iam)))
  allocate(obldata1(gdi(iam)))
  allocate(obldata2(gdi(iam)))
#else
  if(masterproc) then
    call defnatresrad(lis%f%radsrc)
    allocate(obsdata1(lis%d%ngrid))
    allocate(obsdata2(lis%d%ngrid))
    allocate(obldata1(lis%d%ngrid))
    allocate(obldata2(lis%d%ngrid))
  else
    allocate(obsdata1(gdi(iam)))
    allocate(obsdata2(gdi(iam)))
    allocate(obldata1(gdi(iam)))
    allocate(obldata2(gdi(iam)))
  endif
#endif
endif
```

1.1.4 get_obsrad_forcing (Source File: obsradforcing_module.F90)

Calls the routines that read observed radiation forcing methods

INTERFACE:

```
subroutine get_obsrad_forcing
```

USES:

```

    use lisdrv_module, only: lis, grid
    use grid_spmMod
    use driverpardef_module

CONTENTS:

!   sstat1 = 0
!   sstat2 = 0
!   lstat1 = 0
!   lstat2 = 0
    if(lis%f%radsrc.gt.0) then
#if ( defined OPENDAP )
        call getrad(lis%f%radsrc)
#else
        call MPI_GATHERV(grid(1:gdi(iam)),gdi(iam), &
            MPI_GRID_STRUCT,grid,gdi,gdisp,MPI_GRID_STRUCT, &
            0,MPI_COMM_WORLD, ier)
        if(masterproc) then
            call getrad(lis%f%radsrc)
        endif
#endif
#endif
#if ( ! defined OPENDAP )
    call MPI_BCAST(sstat1, 1,MPI_INTEGER,0, &
        MPI_COMM_WORLD, ier)
    call MPI_BCAST(sstat2, 1,MPI_INTEGER,0, &
        MPI_COMM_WORLD, ier)
    call MPI_BCAST(lstat1, 1,MPI_INTEGER,0, &
        MPI_COMM_WORLD, ier)
    call MPI_BCAST(lstat2, 1,MPI_INTEGER,0, &
        MPI_COMM_WORLD, ier)
    call MPI_BCAST(lis%f%findagrtime1,1,MPI_INTEGER,0, &
        MPI_COMM_WORLD, ier)
    call MPI_BCAST(lis%f%findagrtime2,1,MPI_INTEGER,0, &
        MPI_COMM_WORLD, ier)

    if ( lis%f%findagrtime1 == 1 .or. lis%f%findagrtime2 == 1 ) then
        if ( npes > 1 ) then
            call scatter_rad_data()
        endif
    endif
#endif
    call timeinterprad(lis%f%radsrc)
endif

```

1.1.5 scatter_rad_data (Source File: obsradforcing_module.F90)

Distributes radiation forcing data on to the compute node.

INTERFACE:

```
subroutine scatter_rad_data()
```

USES:

```
use grid_spmMod  
use lisdrv_module, only : lis
```